**ANALYSIS SUMMARY**

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* **Analysis Points:**

1. **The correlation between sales and income**

The regression analysis shows a **Positive Strong Relationship (R2 = 0.78)** between sales and income. as the Avg. Sales increases, the average income goes up too.

1. **The correlation between customer ratings and product return rate?**

The regression analysis shows a **Negative Relationship (R2 =0.69)** between customer ratings and product return rate. If product has high customer rating, then the possibility to return the product is low.

1. The linear regression formula **Y = 72.43 X + 72638.21** calculates the expected Income based on Sales.

* X = Avg. customer sales by state
* Y = customer income

1. Jon Little **(JLit30836)** from **Illinois State** has the **highest predicted income ($452,895.71).**
2. **Which product will be advertised the most?**

Considering factors of number in stock, return rate and customer rating, we found that the **Long Dress LDr4317** product has the highest number in stock, the return rate is zero and has a good customer rating (4.5/5), **thus is my opinion this product should be advertised first.**

On the other hand, **Chronograph Watch** achieved an excellent customer rating (4.9) and lowest return rate, along with the current price of $350 thus I suggest marketing this product in the highest average income states like District of Columbia, New Jersey, Maryland, Massachusetts, Hawaii, California, Connecticut, Washington)

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| **Product** | **Targeted Customer Income** | **Marketing Area** | **Target Customer Age** |
| **Long Dress LDr4317** | On Average customer income $91K | Texas, Oregon, Rhode Island, Illinois, Delaware, New York, Minnesota | if purchases list linked with “product ID” this would allow us to do more analysis |
| **Chronograph Watch** | Highest Avg. income customer | District of Columbia, New Jersey, Maryland, Massachusetts, Hawaii, California, Connecticut, Washington | if purchases list linked with “product ID” this would allow us to do more analysis |

* **Other Analysis Findings:**
* Analysis showing that most of predicted customers income **(68%)** is ranged between **$70K – $90K.**
* **District of Columbia** had the **highest Average Income**, while Mississippi had the lowest Average Income at $70,814.125.
* Across all 51 State, Sum of Last 6 Months Purchases ranged from 948.50 to 64,328.57. and **California** had the **highest** sales and was 6,682.14% higher than **South Dakota**, which had the **lowest Sum of Last 6 Months Purchases at 948.50.﻿**
* Product **LBa2237** has noticeably **highest Current Price**, with customer rating 3.3 and return rate 1%.
* 53% of products price is less than $100.
* **Long Dress, Wool Scarf and Sweater Dress Long** accounted for **33%** of the sum of number in stock.
* **Winter Gloves, Button Shirt, Leather Wallet** had the **highest** **Return Rate** while **Chronograph Watch** has the **lowest** return rate.
* **42.7%** of purchases done by Customer of **Ages between 35 – 45.**
* Best sales were in **Sep 2020 with total ($113K) of purchases and in December ($88K),** howeverSum of purchased trended down, resulting in a 99.58% decrease between September 2020 and March 2021.